Results of the Phase I

| **Material** | **Layer Height (mm)** | **Infill Pattern** | **Infill Density (%)** | **Printing Speed (mm/s)** | **Max Load (kN)** | **Young Modulus (kN)** |
| --- | --- | --- | --- | --- | --- | --- |
| Virgin | 0.15 | Tri-hex | 60 | 40 | 2.21 | 514.05 |
| Virgin | 0.3 | Tri-hex | 60 | 80 | 2.16 | 440.78 |
| Virgin | 0.15 | Grid | 60 | 80 | 2.24 | 495.22 |
| Virgin | 0.3 | Grid | 100 | 80 | 3.60 | 96.04 |
| Virgin | 0.3 | Tri-hex | 100 | 40 | 3.62 | 229.49 |
| Virgin | 0.15 | Tri-hex | 100 | 80 | 3.81 | 376.66 |
| Virgin | 0.15 | Grid | 100 | 40 | 3.79 | 311.61 |
| Virgin | 0.3 | Grid | 60 | 40 | 2.16 | 580.99 |
| Recycled | 0.15 | Tri-hex | 60 | 40 | 2.16 | 580.99 |
| Recycled | 0.3 | Tri-hex | 60 | 80 | 2.16 | 114.77 |
| Recycled | 0.3 | Grid | 60 | 40 | 2.15 | 274.55 |
| Recycled | 0.15 | Tri-hex | 100 | 80 | 3.38 | 193.55 |
| Recycled | 0.3 | Tri-hex | 100 | 40 | 3.37 | 22.55 |
| Recycled | 0.15 | Grid | 60 | 80 | 2.05 | 99.58 |
| Recycled | 0.15 | Grid | 100 | 40 | 3.53 | 103.11 |
| Recycled | 0.3 | Grid | 100 | 80 | 3.49 | 269.50 |

ANOVA results at 95\% significance level for Young Modulus.

| **Var** | **Df** | **Sum Sq** | **Mean Sq** | **F value** | **Pr(F)** |
| --- | --- | --- | --- | --- | --- |
| LH | 1 | 26,091.55 | 26,091.55 | 1.249 | 0.290 |
| IP | 1 | 3,667.99 | 3,667.99 | 0.176 | 0.684 |
| ID | 1 | 140,330.05 | 140,330.05 | 6.715 | 0.027\* |
| PS | 1 | 17,639.11 | 17,639.11 | 0.844 | 0.380 |
| Material | 1 | 120,106.46 | 120,106.46 | 5.748 | 0.037\* |
| Residuals | 10 | 208,965.74 | 20,896.57 |  |  |

Signif. codes:

0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1